

## ABSTRACT OF THE DISCLOSURE

In one embodiment, a plurality of pn-junctions are grouped into  $n(n-1)/2$  pairs (where  $n$  is an integer greater than 1) and each pn-junction pair includes a first pn-junction coupled  
5 antiparallel to a second pn-junction. In addition,  $n$  access points are coupled to the plurality of pn-junctions, and through the  $n$  access points  $n-1$  pn-junctions are simultaneously accessible. In another embodiment, an integrated circuit is coupled to the plurality of pn-junctions via the  $n$  access points. In one embodiment, the integrated  
10 circuit may be configured as a temperature measurement IC and the plurality of pn-junctions may be used as temperature sensors. In this embodiment, the temperature measurement IC may be configured to access the first pn-junction independently from the second pn-junction and may be configured to access  $n-1$  pn-junctions simultaneously to perform temperature measurements.

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